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Amendment Dated   :   June 27, 2005
Reply to Office Action of   :   March 30, 2005

REMARKS

Claims 1-44 are pending in this application. In this response, claims 1, 5, 14-15, 30, 40-41, and 43-44 have been amended. No new matter has been added.

Claims Rejections – 35 U.S.C. § 102

Claims 1-4, 11-12, 14-15 and 41-44

Claims 1-4, 11-12, 14-15 and 41-44 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Kar et al., (An Architecture for Managing Application Services over Global Networks). Applicants respectfully request reconsideration of the rejection of these claims.

Claim 1, as amended, requires the step of "discovering the existence of at least one of the components in the IT system by receiving real-time messages and using at least one fingerprint." According to claim 1, components in the IT system are discovered in real-time by using real-time messages and at least one fingerprint, not by periodically acquiring information entirely from existing sources.

As disclosing this element of claim 1, the Examiner cited the section of the Kar paper beginning at page 2 under the heading "The functions performed by a MLM are:...." The first through third bullets under this heading read:

> "The functions performed by a MLM are:
>
> - polling the SNMP agents in its domain; variables being polled and the polling frequency are determined by a policy that is periodically configured on the MLM, to reflect changes in topology. In our scenario, this policy is refreshed once a day to reflect changes in the topology.
> - reception of events/traps from the SNMP agents; event filtering based on rules that are defined by the top-level manager and downloaded to the MLM.
> - storage of polled data locally in a database. This stored data (or a summary of it) is periodically sent up to the top-level manager(s) using some bulk data transfer protocol such as FTP. This data is then analyzed by applications located at the top-level manager to computer SLA statistics, produce histograms, create trending reports, etc."
>
> (Kar paper, page 2, right column, 2nd paragraph, 1st -- 3rd bullets) (emphasis added)

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The first bullet refers to "polling" and using a "polling frequency." The MLM polls the agents at a certain polling frequency in order to find changes in topology, such as whether different nodes exist on the network. Such polling amounts to the retrieval of stored information from repositories. This disclosure, however, does not teach or suggest real-time discovery through the use of "real-time messages" and "at least one fingerprint," as required by claim 1. The second bullet from the Kar paper refers to "reception of events/traps," but there is no indication that these "event/traps" are used for <u>discovery</u> of components, rather than for communication of other information. Further, there is no suggestion that these "event/traps" are real-time messages relating to component discovery, and there is no disclosure about the use of "at least one fingerprint" for discovery.

The Examiner also cited pages 5-6 of the Kar paper as disclosing a similar limitation from independent claim 15. This section states, in part:

> "The agent receives event notifications from the MLMs
> through the platform API and updates the view of the service that it
> maintains. This view can best be represented by a multi-level
> resource graph, where the elements in one level are dependent on
> the availability and status of elements at the next lower level."
> (Kar paper, page 5-6)

This section of the Kar paper does not disclose or suggest using real-time discovery through the use of "real-time messages" and "at least one fingerprint," as required by claim 1. The quoted section from pages 5-6 of the Kar paper refers to "event notifications." Again, however, there is no indication that these "event notifications" are used for <u>discovery</u> of components, rather than for communication of other information. Further, there is no suggestion that these "event notifications" are real-time messages relating to component discovery, and there is no mention or suggestion whatsoever about the use of "at least one fingerprint" for discovery, as required by claim 1.

There is nothing in the Kar paper that discloses or suggests that discovery of components takes place in real-time or that a fingerprint is used for discovery. Because the Kar paper fails to disclose at least this one element from claim 1, the Kar paper does not anticipate claim 1. As such, Applicants respectfully request reconsideration for this ground for rejection.

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The above comments with respect to claim 1 apply equally to independent claims 14, 15, and 44. For example, independent claim 14, as amended, requires "means for discovering the existence of at least one of the components in the IT system by receiving real-time messages and using at least one fingerprint." Similarly, independent claim 15, as amended, requires a processor directed by a program to "discover the existence of at least one of the components in the IT system by receiving real-time messages and using at least one fingerprint." Independent claim 44 requires instructions to "discover components in the IT system by receiving real-time messages and using at least one fingerprint."

Independent claims 41 and 43 contain similar features. For instance, claim 41 as amended requires the step of "discovering the existence of at least one of the components in the IT system by receiving real-time messages and using at least one fingerprint." Similarly, independent claim 43 as amended requires a processor directed by a program to "discover the existence of at least one of the components in the IT system by receiving real-time messages and using at least one fingerprint." The Examiner cited similar portions from pages 2, 5, and 6 of the Kar paper in rejecting these claims. For the same reasons set forth above with respect to claim 1, the Kar paper does not disclose the claimed features of claims 41 and 43.

Thus, as set forth above, the cited Kar paper does not disclose all of the features of Applicants' independent claims 1, 14, 15, 41, 43, and 44. Therefore, Applicants submit that these independent claims, and the claims that depend from those claims, are in condition of allowance. In particular, dependent claims 2-4 and 11-12 depend directly or indirectly from independent claim 1, and claim 42 depends from independent claim 41, and these claims are also in condition for allowance. Applicants' failure to specifically address the Examiner's rejections of dependent claims should not be construed as an acquiescence to such rejections, but a recognition that such rejections are moot based on the dependency from an allowable independent or dependent claim. Applicants respectfully request reconsideration of the rejection of these claims.

<u>Claims 30-40</u>

Claims 30-40 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Keller et al. (Dynamic Dependencies in Application Service Management). Applicants respectfully traverse the rejection of these claims.

Claim 30, as amended, requires the step of "monitoring the usage of resources by the two components in the IT system by receiving real-time messages and, if a resource is used by one of the two components, generating a message indicating the use of that resource by that component." Claim 30 also requires "accumulating each message" and "if the accumulated messages indicate that the two components use the same resource, then indicating that a dependency between the two components has been detected." Claim 40 contains a processor to perform such steps. Thus, claims 30 and 40 relate to determining dependencies between components in an IT system in real-time, not by acquiring dependency information entirely from existing sources.

The Examiner cited page 6 of the Keller paper as disclosing the step from claim 30 of "monitoring the usage of resources by the two components in the IT system by receiving real-time messages and, if a resource is used by one of the two components, generating a message indicating the use of that resource by that component." The cited portion from page 6 states, in part:

> ...We assume that through offline analysis – based on the methodology and approach presented in section 4 – a database of <u>static dependencies</u> is constructed.
> (Keller paper, page 6, right column, 1st paragraph)
> (emphasis added)

Another portion of the Keller paper states:

> "Examples of how dependencies can be obtained are:
>
> • The application explicitly lists its dependencies;
> • The information is acquired from the environment (e.g., system repository, configuration and installation files, etc.)."
> (Keller paper, page 5, left column, 1st paragraph)

The disclosure from pages 5-6 of the Keller paper does not teach or suggest Applicants' claimed step of "monitoring the usage of resources by the two components in the IT system by receiving real-time messages." Nor does the rest of the Keller paper

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disclose this feature. The Keller paper discloses obtaining dependencies by evaluating if the application "lists its dependencies" and by acquiring dependency information from the repositories in the environment, such as a "system repository, configuration and installation files." (*See* Keller paper, page 5) Further, the cited portion of page 6 of the Keller paper refers to constructing a database of "static dependencies." The Keller paper does not, however, teach monitoring the real-time usage of resources by components by "receiving real-time messages," as required by independent claims 30 and 40 As such, the Keller paper fails to disclose at least this one element of the invention from claims 30 and 40, and Keller cannot, therefore, anticipate claims 30 and 40.

Applicants submit that independent claims 30 and 40, and the claims that depend from those claims, are in condition of allowance. In particular, dependent claims 31-39 depend directly or indirectly from independent claim 30, and are therefore in condition for allowance. Applicants respectfully request reconsideration of this ground for rejection.

Claims Rejections – 35 U.S.C. § 103

Claims 5-10 and 13

The Examiner has rejected claims 5-10 under 35 U.S.C. 103(a) as being unpatentable over the Kar paper in view of Kathrow, et al., U.S. Pat. No. 6,393,438 B1. The Examiner stated that "Kar does not show" the specific features of claim 5. Recognizing that Kar is not enough, the Examiner cited the Kathrow patent for the features set forth in claim 5 and cited the Kar paper for the features set forth in claim 1, from which claim 5 depends.

As the Examiner knows, a prima facie case of obviousness requires a suggestion or motivation to combine, a reasonable expectation of success, and a teaching or suggestion of all claim limitations. (MPEP §2143.) As Applicants shall show, the cited prior art fails to teach or suggest all of the claim limitations. Applicants, therefore, respectfully request reconsideration of this ground for rejection.

Claim 5 requires, in part, "comparing the first component along with other components to the at least one fingerprint, wherein the fingerprint represents key low-level elements of a model of a known component" and "determining that at least one of the components exists when all of the elements of the fingerprint corresponding to the known component are matched." Thus,

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according to the invention of claim 5, event information relating to a first component is received, the first component and other components are compared to a fingerprint, and it is determined that a component exists when "all of the elements of the fingerprint corresponding to the known component are matched." Thus, the fingerprint is used to discover the existence of a component in the IT system.

Regarding these features from claim 5, the Examiner cited Figure 4 and Columns 4 and 11 from the Kathrow patent. In reference to Figure 4, the Kathrow patent states that "a method for determining whether a Windows registry file has changed from a prior version is shown...." (column 11, ll. 5-8; see also column 3, ll. 8-12) (emphasis added) Column 11 of Kathrow describes the generation of a "fingerprint" for the file. The Kathrow patent also discloses the generation of another fingerprint for a later version of the file and a comparison between the two fingerprints:

> "The fingerprint produced in step 430 is compared 432 with the fingerprint stored in step 420 as identified by the user in step 424, if applicable. If the fingerprints are identical 434, the method terminates 440.... If the fingerprints are not identical 434, differences may be identified 436 between the values corresponding to the two fingerprints compared in step 432."

(Figure 4, column 11, ll. 49-59)

Unlike the invention claimed in claim 5, the Kathrow patent does not compare components based on event information to a fingerprint. Instead, the Kathrow patent discloses comparing a first fingerprint of a file to second, later fingerprint for the same file, thus detecting if the two files are different. Further, the Kathrow patent does not use fingerprints to determine whether a component exists. Kathrow, instead, seeks to detect whether a file has changed from a previous version of the same file. Claim 5, for instance, requires "determining that at least one of the components exists when all of the elements of the fingerprint corresponding to the known component are matched." Thus, contrary to the Examiner's proposition, Kathrow cannot be combined with the Kar paper to form the claimed invention. Applicants also note the differences between claim 1 and the Kar paper that are set forth above with respect to claim 1. The cited prior art, either alone or in combination, does not disclose all of the features of Applicants' claim 5. Therefore, Applicants submit that claim 5, and claims 6-10, which depend from claim 5, are

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in condition for allowance. Applicants respectfully request reconsideration of this ground for rejection.

Claim 13 also stands rejected under 35 U.S.C. 103(a) as being unpatentable over the Kar paper in view of the Kathrow patent. The Examiner acknowledged that "Kar does not show matching event information with elements of one or more fingerprints of known components," but instead cited Kathrow for this feature. For the same reasons set forth above in connection with claim 5, Kathrow does not disclose comparing components based on event information to a fingerprint. Claim 13 requires an analysis module to, in part, "match event information with elements of one or more fingerprints of known components using an accumulator to discover the existence on the IT system of at least one of the components." Because this element is not taught or suggested by the Kathrow patent, the Kathrow patent cannot properly be combined with the Kar paper to form the claimed invention. Applicants, therefore, respectfully request reconsideration for this ground of rejection.

Claims 16-24, 25-27, and 28-29

Claims 16-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Kathrow patent in view of the Kar paper. The Examiner acknowledged that "Kathrow does not show if the first component and the other discovered components match substantially all of the key low-level element of the fingerprint, using A SUBFINGERPRINT of a known refined component to discover the existence of a second component that corresponds to the known refined component." The Examiner cited the Kar paper at pages 5-6 as disclosing this feature.

As an initial matter, for the reasons set forth above in connection with claims 5 and 13, Kathrow does not disclose comparing components based on event information to a fingerprint. Kathrow does not, therefore, disclose the claimed features of claim 16 of "comparing the first component along with other components to at least one fingerprint, wherein the fingerprint represents key low-level elements of a model of a known component," and "using a subfingerprint of a known refined component to discover the existence of a second component...."

Further, the Kar paper does cure these deficiencies of the Kathrow patent. In particular, there is no disclosure in Kar relating to the use of fingerprints or subfingerprints. In fact, with respect to claim 13, the Examiner acknowledged that "Kar does not show matching event

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information with elements of one or more fingerprints of known components." The cited disclosure from pages 5-6 of the Kar paper relating to the static analysis of installation repositories and the construction of a dependency graph and a multi-level resource graph does not relate to the use of "a subfingerprint of a known refined component to discover the existence of a second component," as required by claim 16. For at least these reasons, Applicants submit that the combination of Kathrow and Kar does not disclose all of the claimed limitations of claim 16.

   Independent claims 23 and 24 contain similar limitations as those recited above for claim 16. These claims, therefore, are also allowable over the combination of Kathrow and Kar. Further, claims 17-22 depend directly or indirectly from claim 16 and are also in condition for allowance. Applicants respectfully request reconsideration.

   Claims 25-27 and 28-29 also stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Kathrow patent in view of the Kar paper. Regarding independent claims 25 and 28, the Examiner relies upon an analysis similar to that set forth for independent claim 16 above. For the reasons set forth above, Applicants respectfully submit that the Kathrow patent does not teach the features of claim 25 of, "if the first component matches at least one low-level element of a fingerprint of a model of a known component...." Applicants also respectfully submit that the Kathrow patent does not teach the features of claim 28 relating to "using a fingerprint of a model of a known component to discover an existing component in the IT system by matching passive elements in the fingerprint with event information of the IT system." Further, the Kar paper does not disclose the use of a "subfingerprint of a known refined component ... to discover a refined component," as required by claim 25. Claim 28 requires a similar feature. Applicants, therefore, submit that claims 25 and 28 are allowable over the combination of the Kathrow patent and the Kar paper. Claims 26-27 depend from claim 25 and claim 29 depends from claim 28. These dependant claims, therefore, are also in condition for allowance. Applicants respectfully request reconsideration of this ground for rejection.

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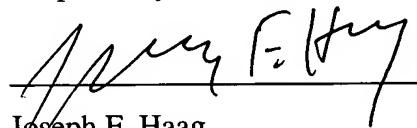
CONCLUSION

For the reasons stated above, Applicants believe that the claims now pending in this application are allowable. Applicants respectfully request reconsideration and allowance.

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Respectfully submitted,

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